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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,977	05/14/2007	Peiqi Jiang	ESSR:118US/10608218	3720
33425 7590 10/11/2011 FULBRIGHT & JAWORSKI L.L.P. 98 SAN JACINTO BOULEVARD SUITE 1100 AUSTIN, TX 78701-4255				
EXAMINER				
DYE, ROBERT C				
ART UNIT		PAPER NUMBER		
1747				
NOTIFICATION DATE		DELIVERY MODE		
10/11/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

aopatient@fulbright.com

Office Action Summary**Application No.**

10/596,977

Applicant(s)

JIANG ET AL.

Examiner

ROBERT DYE

Art Unit

1747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 39-83 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 39-83 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

1. This is a Non-Final Office Action in response to Applicant's reply, dated 7/15/2011, to a Request for Continued Examination. Claims 39-83 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 39-66, 68-70, 76, 77, 82 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (USP 5,512,371) in view of Dawson (USP 4,417,790), and in the alternative, further in view of Jiang et al. (USP 6,562,466).

6. Regarding claims 39 and 76, Gupta et al. (hereinafter Gupta) teach a process for transferring a single monolayer coating onto a surface of a lens preform comprising providing a finished or semi-finished optical preform having at least one geometrically defined surface (col 3, line 25-36, item 11, Fig. 1); providing a mold part having an internal surface and an external surface (mold 13); depositing liquid curable coating composition between mold and preform; moving the preform and mold together; applying sufficient pressure to spread the liquid curable coating resin; curing the resin; and recovering the coating article (col 4, lines 42-49; col 5, lines 28-31, 36-45, 60-64; col 6, lines 57-60).

7. Gupta is silent on the roughness of the lens surface and does not teach provision of the optical lens having at least one fined but unpolished geometry defined main face having a root mean square profile higher than or equal to $0.01\mu\text{m}$. In the same field of endeavor of applying coating to optical articles, Dawson teaches that traditionally, a finished optical lens requires steps of fine grinding and polishing followed by covering the polished surfaces with a coating (col 1, lines 18-29). Dawson teaches that one can obviate the need for much, if not all, of the traditional finishing equipment and procedures by simply coating the roughened surface with a single coating layer which is about 10 times the thickness of the surface roughness (col 1, lines 35-39; col 2, lines 21-25; col 3, lines 43-60; Dawson further discloses a roughness of 0.8 microns in the

example). It would have been obvious to a person having ordinary skill in the art at the time of the invention to forgo any conventional polishing step and simply coat an unpolished lens in the method of Gupta for the purpose of reducing finishing costs as taught by Dawson. Regarding the fined but unpolished surfaces required by the claims, Dawson teaches that the method can obviate the need for "much, if not all" finishing steps (thus, is not considered to teach away from fine grinding if desired); and that the thickness of the applied coating is dependent upon the initial surface roughness of the lens (coating is 10 times the roughness; col 3, lines 42-46). It would have been obvious to a person having ordinary skill in the art at the time of the invention to have machined the surface of the lens with a procedure such as fine grinding for the purpose of reducing surface roughness and thus, the required coating thickness.

8. In the alternative, Jiang similarly teaches a coating process wherein a lens which has a fined but unpolished surface with surface roughness ranging from 0.001 μm to 1 μm (col 3, lines 24-35) is coated to eliminate the additional step of polishing the lens (col 7, lines 50-62). It would have been obvious to a person having ordinary skill in the art to provide a fined but unpolished lens to a coating process as taught by Jiang in the method of Gupta in view of Dawson for the purpose of providing a lens having suitable roughness on which a coating may be applied.

9. Regarding claim 40, Gupta teach that the liquid coating composition layer is cured under pressure (col 5, lines 36-45).

10. Regarding claim 41, Gupta teach that the mold part is glass or metal (col 3, lines 11-24) and that the curvature of the surface of the mold is preferably matched to the curvature of the surface of the lens preform (col 4, lines 46-48).

11. Regarding claims 42 and 46, Gupta teach that the mold is made of plastic (col 3, lines 11-14). It is noted that plastic is more flexible than glass or metal. Gupta also teach that the curvature of the surface of the mold is preferably matched to the curvature of the surface of the lens preform (col 4, lines 46-48).

12. Regarding claims 43-45, 47, 51 and 52, Gupta does not teach the use of an inflatable flexible membrane, a flexible mold made of polycarbonate or PMMA, or the pressure exerted. Jiang discloses a coating system for applying coatings to an optical article wherein said system does not necessitate the use of specific mold parts for each prescribed final lens geometry and which does not entail any deformation of the lens blank (col 2, lines 40-43; lines 45-48). Said coating system employs a flexible membrane made of polycarbonate with thickness of 0.3 to 1mm (col 3, lines 44-46, 58; col 4, lines 9-11). Further, Jiang teaches a preferable pressure range of 5 to 20psi (35 to 138kPa; col 3, lines 47-48). It would have been obvious to a person having ordinary skill in the art to employ the flexible membrane system taught by Jiang to apply the coating layer of Gupta for the purpose of avoiding any deformation of the lens blank (Jiang, col 2, lines 40-42).

13. Regarding claim 48, Gupta teach the liquid is UV curable (col 5, lines 60-66).

14. Regarding claims 49 and 50, Gupta teach the mold part is UV-transparent plastic (col 3, lines 11-14).

15. Regarding claims 53-58, Dawson teaches a roughness of 0.8 micron (col 3, line 46). Gupta teach that the preform is made of polycarbonate (col 3, lines 25-38). Further, Jiang teaches that the fined but unpolished lens suitable for coating have surface roughness of 0.001 um to 1um (col 3, lines 24-35).

16. Regarding claims 59-62, Dawson teaches the coating is applied such that it is approximately ten times the depth of the surface roughness and provides an example coating of 8 microns (col 3, line 60). It is noted, that while dip coating is employed in the example, Dawson states that other coating procedures may be employed (col 2, lines 23-25. Regarding claim 62, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have employed a thinner coating for the benefit of reducing the amount of coating material required or to reduce the overall weight or size of the lens.

17. Regarding claim 63, Gupta discloses selecting a coating resin with refractive index similar to the optical article (col 2, lines 25-31).

18. Regarding claim 64, Gupta teach that the resin provides anti-scratch properties (col 3, lines 1-9; col 7, lines 10-12).

19. Regarding claim 65 and 70, Gupta teach the main face of the preform may be the back face of the preform (col 4, lines 35-41).

20. Regarding claims 66 and 68, Gupta teaches that the optical article is a lens (col 3, line 25) and that the lens may be colored or coated with photochromatic materials (col 4, lines 21-25).

21. Regarding claim 69, Gupta teach that the article is a lens preform (col 3, line 25).

22. Regarding claim 77, as discussed above, Jiang discloses that coating can eliminate the need for polishing step. Therefore, it would be expected that the coated surface roughness would be under 0.01 μ m.

23. Regarding claims 82 and 83, Gupta discloses the lens as being made of polycarbonate (col 3, line 35). Gupta does not disclose the lens as being made of diethylene glycol bis-allyl carbonate; however, such polymer is a well-known and conventional material used for produce lens blanks. For example, Jiang discloses diethyleneglycol bis-allylcarbonate and polycarbonate as preferred plastics for forming lenses (col 5, lines 5-7). Regarding the surface roughness, Dawson discloses a surface roughness of 0.8 micron as suitable for coating (col 3, line 47; could be considered to be "about 1.0 μ m" or "about 0.5 μ m"). Further, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have determined the optimal surface roughness of the lens blank to be coated in order to balance the cost of performing finishing operations to achieve a smoother lens against the cost of applying a thicker coating to produce a finish of optical quality.

24. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (USP 5,512,371) in view of Dawson (USP 4,417,790), and in the alternative, further in view of Jiang et al. (USP 6,562,466) as applied to claim 39 above, and further in view of Degand et al. (USP 6,489,028, of record).

25. Regarding claim 67, Gupta (combined) teach the method of claim 39 as described above and further discloses anti-reflective coatings as conventional but does

not teach applying anti-reflective coatings onto the cured coating. In the same field of endeavor of molding optical articles, Degand et al. disclose that it is known to apply an anti-reflective coating to the cured surface of the lens (col 6, lines 1-6). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to employ a known sequence of steps for applying the anti-reflective coating to the surface of the cured lens as taught by Degand et al. in the method of Gupta (combined) for the purpose of providing a lens that has excellent abrasion resistance while also having anti-reflective properties (col 5, line 38-col 6, line 9).

26. Claims 71, 72, 78 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (USP 5,512,371) in view of Dawson (USP 4,417,790), and in the alternative, further in view of Jiang et al. (USP 6,562,466) as applied to claim 39 above, and further in view of Brytsche et al. (USP 5,753,301, of record).

27. Regarding claims 71 and 78, Gupta (combined) teaches the method of claim 39 as discussed above, but does not disclose the method is employed to coat a lens mold. However, in the same field of endeavor of coating optical articles, Brytsche et al. (hereinafter Brytsche) disclose that methods of coating lens, lens blanks, and lens molds are known to be interchangeable and equivalent (abstract). Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to utilize the method disclosed by Gupta (combined) to coat a lens mold since Brytsche disclose that lens molds, lens, and lens blanks may be coated through

equivalent means. One having ordinary skill in the art would have been motivated to maximize the applications of Gupta (combined) method as suggested by the disclosure of the art-recognized equivalence of materials.

28. Regarding claim 72, Brytsche teaches that the lens mold to be coated can be made of a number of suitable materials including glass (col 8, lines 30-35).

29. Regarding claim 79, Brytsche teaches that the lens mold to be coated can be made of a number of suitable materials including metal (col 8, lines 30-35), a non-transparent material.

30. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (USP 5,512,371) in view of Dawson (USP 4,417,790), alternatively further in view of Jiang et al. (USP 6,562,466), and Brytsche et al. (USP 5,753,301) as applied to claim 72 above, and further in view of Degand et al. (USP 6,489,028, of record).

31. Regarding claim 67, Gupta (combined) teach the method of claim 39 as described above and further discloses anti-reflective coatings as conventional but does not teach applying anti-reflective coatings onto the cured coating. In the same field of endeavor of molding optical articles, Degand et al. disclose that it is known to apply an anti-reflective coating to the cured surface of the lens (col 6, lines 1-6). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to employ a known sequence of steps for applying the anti-reflective coating to the surface of the cured lens as taught by Degand et al. in the method of Gupta (combined) for the purpose of providing an optical article that has

excellent abrasion resistance while also having anti-reflective properties (col 5, line 38- col 6, line 9).

32. Claims 74 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (USP 5,512,371) in view of Dawson (USP 4,417,790), and in the alternative, further in view of Jiang et al. (USP 6,562,466) as applied to claims 39 and 76 above, and further in view of Li et al. (USP 6,565,776, of record).

33. Gupta (combined) teaches the method of claims 39 and 76 as discussed above but does not teach the mold part is precoated with a release or protective coating. In the same field of endeavor of molding optical articles, Li et al. (hereinafter Li) teach that it is known to provide lens mold parts with a protective coating (abstract). Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a protective layer to the mold part disclosed by Gupta (combined) as suggested by Li for the purpose of producing a mold part with greater dimensional stability and chemical resistance (abstract).

34. Claims 75 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (USP 5,512,371) in view of Dawson (USP 4,417,790), and in the alternative, further in view of Jiang et al. (USP 6,562,466) as applied to claims 39 and 76 above, and further in view of Keller et al. (USP 6,491, 851, of record).

35. Gupta (combined) teach the method of claims 39 and 76 as discussed above but do not teach a mold part having microstructure or a pattern to be duplicated in the lens

bank. However, in the same field of endeavor of molding optical articles, Keller et al. (hereinafter Keller) disclose a mold part having a microstructure or a pattern to be duplicated in the lens blank (abstract). Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to employ a mold part with a microstructured surface as disclosed by Keller in the method of Gupta (combined) to produce a lens with improved anti-glare properties (abstract).

Response to Arguments

36. Applicant's arguments filed 7/15/2011 have been fully considered but they are not persuasive.
37. Applicants argue that while Jiang allows for the elimination of a polishing step of the lens, it does so only in the context of depositing at least two layers onto the surface of the unpolished lens.
38. Examiner has applied Dawson which teaches the application of a single coating layer for the purpose of obviating the need to perform polishing steps.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT DYE whose telephone number is (571)270-7059. The examiner can normally be reached on Monday to Friday 9:00AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RCD/

/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1747